## **CLAIMS**

## What is Claimed is:

- 1. A method of treatment, comprising:
  - a) providing:
    - i) a subject with symptoms of inflammatory bowel disease, and
  - ii) a therapeutic composition comprising a biologically active vitamin D compound; and
- b) administering said therapeutic composition to said subject under conditions such that said symptoms are reduced.
- 10 2. The method of Claim 1, wherein said subject is a mammal.
  - 3. The method of Claim 1, wherein the subject is selected from a human, non-human primate, horse, dog, and cat.
  - 4. The method of Claim 1, wherein said therapeutic composition further comprises a transdermal patch.
- 5. The method of Claim 1, wherein said biologically active vitamin D compound is selected from the group of vitamin D,  $1\alpha,25-(OH)_2-16$ -ene-D<sub>3</sub>,  $1\alpha,25-(OH)_2-24$ -oxo-16-ene-D<sub>3</sub>,  $1\alpha,24R(OH)_2$ -D<sub>3</sub>,  $1\alpha,25(OH)_2-22$ -oxa-D<sub>3</sub>, 20-epi-22-oxa-24a,24b,-dihomo- $1\alpha,25(OH)_2$ -D<sub>3</sub>, 20-epi-22-oxa-24a,26a,27a,-trihomo- $1\alpha,25(OH)_2$ -D<sub>3</sub>, 20-epi-22-oxa-24homo- $1\alpha,25(OH)_2$ -D<sub>3</sub>, 1,25- $(OH)_2$ -16,23E-diene-26-trifluoro-19-nor-D<sub>3</sub>.

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6. The method of Claim 1, wherein said biologically active vitamin D compound is selected from the analogs represented by the following formula:

$$Z^1$$
 $Z^2$ 
 $OX^1$ 

wherein  $X^1$  and  $X^2$  are each selected from the group consisting of hydrogen and acyl;

wherein  $Y^1$  and  $Y^2$  can be H, or one can be O-aryl or O-alkyl while the other is hydrogen and can have a  $\beta$  or  $\alpha$  configuration;  $Z^1$  and  $Z^2$  are both H or,  $Z^1$  and  $Z^2$  taken together are  $CH_2$ ; and

wherein R is an alkyl, hydroxyalkyl or fluoroalkyl group, or R may represent the following side chain:

$$R^{8}$$
 $21$ 
 $R^{4}$ 
 $R^{5}$ 
 $R^{2}$ 
 $R^{6}$ 
 $R^{3}$ 
 $R^{1}$ 

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wherein (a) may have an S or R configuration and wherein R<sup>1</sup> represents hydrogen, hydroxy or O-acyl, R<sup>2</sup> and R<sup>3</sup> are each selected from the group consisting of alkyl, hydroxyalkyl and fluoroalkyl, or, when taken together represent the group--(CH<sub>2</sub>)<sub>m</sub>--where m is an integer having a value of from 2 to 5, R<sup>4</sup> is selected from the group consisting of hydrogen, hydroxy, fluorine, O-acyl, alkyl, hydroxyalkyl and fluoroalkyl, R<sup>5</sup> is selected from the group consisting of hydrogen, hydroxy, fluorine, alkyl, hydroxyalkyl and fluoroalkyl, or, R<sup>4</sup> and R<sup>5</sup> taken together represent double-bonded oxygen, R<sup>6</sup> and R<sup>7</sup> taken together form a carbon--carbon double bond and R<sup>8</sup> may be H or CH<sub>3</sub>, and wherein n is an integer having a value of from 1 to 5, and wherein the carbon at any one of positions 20, 22, or 23 in the side chain may be replaced by an O, S, or N atom.

- 7. The method of Claim 1, wherein said administration is 0.1-20 μg per day per 160 pound subject.
- 8. The method of Claim 1, wherein said administration does not cause serious hypercalcemia.
- 9. The method of Claim 1, wherein said administration does not cause symptoms of hypercalcemia.
- 10. The method of Claim 1, wherein the route of administration is selected from intravenously, orally, parenterally, topically, and rectally.
- 20 11. The method of Claim 1, wherein said biologically active vitamin D compound is administered in a therapeutically effective amount.
  - 12. The method of Claim 11, wherein said therapeutically effective amount is the maximum the patient can tolerate without developing serious hypercalcemia.

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- 13. A method of treatment, comprising:
  - a) providing:
    - i) a subject at risk for inflammatory bowel disease, and
  - ii) a therapeutic composition comprising a biologically active vitamin D compound; and
- b) prophylactically administering said therapeutic composition to said subject.
- 14. The method of Claim 13, wherein said biologically active vitamin D compound is selected from the group of vitamin D,  $1\alpha,25-(OH)_2-16$ -ene-D<sub>3</sub>,  $1\alpha,25-(OH)_2-24$ -oxo-16-ene-D<sub>3</sub>,  $1\alpha,24R(OH)_2$ -D<sub>3</sub>,  $1\alpha,25(OH)_2$ -22-oxa-D<sub>3</sub>, 20-epi-22-oxa-24a,24b,-dihomo- $1\alpha,25(OH)_2$ -D<sub>3</sub>, 20-epi-22-oxa-24a,26a,27a,-trihomo- $1\alpha,25(OH)_2$ -D<sub>3</sub>, 20-epi-22-oxa-24homo- $1\alpha,25(OH)_2$ -D<sub>3</sub>, 1,25- $(OH)_2$ -16,23E-diene-26-trifluoro-19-nor-D<sub>3</sub>.
- 15. The method of Claim 13, wherein said biologically active vitamin D compound is selected from the analogs represented by the following formula:

$$Z^1$$
 $Z^2$ 
 $X^2O$ 
 $Y^1$ 
 $Y^2$ 
 $X^2$ 

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wherein  $X^1$  and  $X^2$  are each selected from the group consisting of hydrogen and acyl;

wherein  $Y^1$  and  $Y^2$  can be H, or one can be O-aryl or O-alkyl while the other is hydrogen and can have a  $\beta$  or  $\alpha$  configuration;  $Z^1$  and  $Z^2$  are both H, or  $Z^1$  and  $Z^2$  taken together are  $CH_2$ ; and

wherein R is an alkyl, hydroxyalkyl or fluoroalkyl group, or R may represent the following side chain:

$$R^{8}$$
 $21$ 
 $a$ 
 $R^{4}$ 
 $R^{5}$ 
 $R^{2}$ 
 $R^{6}$ 
 $R^{3}$ 
 $R^{1}$ 

wherein (a) may have an S or R configuration and wherein R<sup>1</sup> represents hydrogen, hydroxy or O-acyl, R<sup>2</sup> and R<sup>3</sup> are each selected from the group consisting of alkyl, hydroxyalkyl and fluoroalkyl, or, when taken together represent the group--(CH<sub>2</sub>)<sub>m</sub>--where m is an integer having a value of from 2 to 5, R<sup>4</sup> is selected from the group consisting of hydrogen, hydroxy, fluorine, O-acyl, alkyl, hydroxyalkyl and fluoroalkyl, R<sup>5</sup> is selected from the group consisting of hydrogen, hydroxy, fluorine, alkyl, hydroxyalkyl and fluoroalkyl, or, R<sup>4</sup> and R<sup>5</sup> taken together represent double-bonded oxygen, R<sup>6</sup> and R<sup>7</sup> taken together form a carbon--carbon double bond and R<sup>8</sup> may be H or CH<sub>3</sub>, and wherein n is an integer having a value of from 1 to 5, and wherein the carbon at any one of positions 20, 22, or 23 in the side chain may be replaced by an O, S, or N atom.

- 16. The method of Claim 13, wherein said administration delays the onset of symptoms of inflammatory bowel disease.
- 25 17. The method of Claim 13, wherein said subject at risk for inflammatory bowel disease is a human.

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- 18. The method of Claim 17, wherein said human is selected from a young adult, a person living in the United States, a person living in England, a person living in Northern Europe, a person of Jewish descent, a person living in a developing nation, a person with family members who suffer from inflammatory bowel disease or a person determined to carry an IBD risk gene.
- 19. The method of Claim 13, wherein the route of administration is selected from intravenously, orally, parenterally, topically, and rectally.
- 20. The method of Claim 13, wherein said therapeutic composition further comprises a transdermal patch.